

And Then There Were PAVs



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PAVS**By:****Afaq Tariq**

Generations of development have reached a pinnacle in aviation technology. It is evident that these technologies are systematically affecting everything from local communities to worldwide travel. But as substantially large the world wide traveling industry is, there is an important effect that aircrafts have on the daily life of American citizens. If a few citizens were able to acquire Personal Air Vehicles, or PAVs, it would affect the entire country if not the world. But most questions would arise due to the concerns of local effects of the aircrafts.

Every local government would support or protest against PAVs according to their local concerns and political interests. Even if a majority of people were to agree on one decision it would be for far different motives. Perhaps one region would decide that the crafts would benefit their economical revenue, and yet another region could make the same judgment due to the necessity of the aircraft in their emergency transport system. I think that everyone would come upon their decision on the basis of their local needs. So it is only appropriate that I base my personal predictions and theoretical statements on the belief that PAVs were to be released in the NJ-NY-CT tri-state area.

So upon that foundation, if PAVs were to be released in the tri-state area there would be major transformations in many parts of daily life. The most welcomed use for PAVs would probably be as an emergency vehicle. But soon enough there would be people that will want PAVs for their private use. This popular form of travel, once it lands in the hands of the public, can rival all other transportation vehicles and ultimately compare to the success of cars! So there would also be a grand effect on the economical state of the region as well. As with the car, the PAVs would also be subject to many substantial inquiries such as pollution and safety. There would also be an unforeseen effect on airports (public and private), aviation and travel companies such as Boeing and American Airlines, which represent a billion dollar industry. This would, in all probability, occur within the first few years if not months of the introduction of PAVs.

So let's forecast that NASA has introduced its PAV technology to some of the tri-state area's airports. In order to achieve a satisfactory analysis PAVs would have to be introduced in many different locations including private airports and rural and urban areas. Therefore, PAVs would be utilized in big-time airports like La Guardia as well as small ones like Teterboro. PAVs would be used in private residential properties. Now that we have our setting and situations theoretical speculations can be made about the outcome of PAVs being introduced to and being used by the tri-state residents.

Where Would PAVs be Used?

The perception of a private aircraft (PAV) that allows you to travel small distances alone or with the company of others is very efficient. If airports used the same vehicle there would have to be a standard for each PAV. Especially for airports that provide public use of PAVs there would need to be an official “rule” on which PAV is best suited for the task presented. In the case of one or two people that are going to travel a small distance there would have to be one (or a few) specific brands or types of PAVs. That way, the aircrafts can be utilized in uppermost efficiency.

To illustrate my point on this issue I will formulate a few different possibilities in which the presented PAVs may be used publicly and privately. One situation that is most likely to occur is the specification of which PAVs can be used in residential areas and conversely which are restricted to professional use. My prediction is that the VTOL will be the only PAV that would be restricted to professional use. This would happen because of the Air-Taxi’s exceptional abilities for instance its cruise speed of 250mph and its vertical takeoff and landing feature quiet enough to operate as close as 500 feet to a residential area. These extraordinary attributes will subject it to its safety in private use. Even if they were to be released to the private use of the public there would be the issue of cost. The price range of approximately one million dollars will limit the potential buyers to affluent corporate populace, who usually maintain their aircrafts in local airfields. Another potential customer for the VTOL Air-Taxi would be the local emergency department. Rivaling the helicopter, it could potentially aid in increasing the effectiveness of the emergency rescue missions. It can be used in New York and New Jersey Coast Guards and local emergency services such as the police departments. Perhaps it can one day be used in armed forces’ missions, as it is cheaper than the current helicopters.

On the contrary, some PAVs will be popular for private individual use. It has become evident, through personal experience and professional published research, that taking short distance trips, especially in NJ, leads to extreme traffic backups. And since most vehicles in traffic carry, on average, 2 people it would be common sense to employ a PAV that would solve this predicament by allowing one or two passengers to travel small distances more efficiently. The *Mid-term Gridlock Commuter Aircraft* represents just that. This PAV can save time and money for drivers and local governments. A driver can invest in a small vehicle that can provide optimum performance with supplementary features. Since all U.S. residents live an average of 30 minutes away from an airport, individuals who wish to maintain their Mid-term Gridlock Commuter Aircraft at a local airport can easily access it. Residents that need a vehicle for a small trip can use this PAV as a private vehicle. In the long run it could end up saving money for everyone.

The *Near-term Next Generation General Aviation Aircraft* is the most challenging to speculate upon. This PAV can be operated in many places and for more than one purpose. As with other General Aviation Aircrafts, this PAV will probable reside in one of more than 10,000 General Aviation airfields across the nation. Since this craft is capable of carrying four passengers it can be used for the purposes of the *Mid-term Gridlock Commuter Aircraft* or *VTOL*. Though there are numerous uses for the *Near-*

term Next Generation General Aviation Aircraft, it would cause problems, as would the *VTOL*, for residential and other private owners because of its immense speed and the dangers that speed would cause. So it would make sense if this PAV along with the *VTOL* would be kept in airports such as Teterboro or in facilities in upper NY State where they can be kept under professional maintenance.

Each and every PAV would require a standard based on factors such as its capabilities and price. There would also be an urgent need for laws and regulations that would impose those standards. Who would make these policies and where would they take affect? Though I cannot predict what will happen I will give what I theorize to be the most likely possibilities.

PAV Security

Though these PAVs have a wide array of uses in the tri-state area there is one major “catch”. Due to current world events there would be much controversy on the security risk these aircrafts could potentially cause. Especially in the tri-state area national security would be the up-most priority of the local communities. Many of the questions that would be asked, as they were in past speculations, would involve scenarios in which the crafts could be misused by individuals and the precautions that need to be taken to avoid such actions. Like all other aircrafts there would be precarious circumstances that cannot be prepared for. But that does not mean that the cautious public will not account for those situations. In order to gain the best insight into the precautionary measures that need to be taken, I will predict the possibility of the most probable scenarios and precautionary measures that should be taken against them.

There are countless possible occurrences of misuse for single-engine aircrafts, which are the closest comparison to the sizes and capabilities of PAVs. The first and foremost concern of NJ and NY communities would be the accessibility to them. If the crafts are sitting in an airfield overnight, what is stopping someone to sneak in and takeoff with them? To resolve this problem there would have to be a safety measure similar to car alarms. Not only an alarm but there would also be a need for twenty-four hour monitoring system for PAVs in use. This system can be radar based, similar to the FAA monitoring system, which uses live personal that monitor its position at all times during a flight.

Thus bringing us to the main point behind this issue, a defense and policing system for PAVs. An example would be with the action that is taken for hijackings, the responding of fighter jets that are ready to take action in 15 minutes. Who would respond to similar emergencies for PAVs? There would have to be a policing system with an arsenal of aircrafts. This policing system can be provided through the air force or through private means. These aircrafts must have the ability to catch up with PAVs in transition. It is evident that without a way to monitor and patrol them there would be a chaotic and unsafe environment in our airspace.

Another obstacle that can cause security setbacks is the inability of most citizens to operate PAVs. If a vehicle is meant for regular citizens then it should have safeguards to prevent amateur accidents and technical failures. If you are a new driver everything is

suited for the accidents that are bound to happen due to your inexperience. The insurance is raised and you are given prohibition regulations by which you must abide. The regulations for PAVs need to be taken on a much bigger scale. The most convenient answer would be a type of autopilot aspect that allows as much control as possible with in reason of safety. An autopilot system such as that would be a necessity for PAVs in private use of citizens.

What Benefits do PAVs Have?

Congestion of roadway traffic is a costly predicament. It costs the average New Jersey driver around 1,000 dollars annually. Particularly in Bergen County, my home county, roadway traffic congestion has risen over 70% since 1998. Bergen County loses nearly 180 million dollars annually due to traffic congestion. According to the MOBILITY AND THE COSTS OF CONGESTION IN NEW JERSEY survey the average driver suffers over 33 hours of delay due to traffic congestion in NJ! All of these facts demonstrate the shortcomings of present day means of transportation. And that is only one predicament caused by cars. PAVs can revolutionize the way people travel by covering the gaps left behind by cars and other vehicles. Everywhere from comfort to distance they are capable of outperforming all other vehicles.

The majority of the educated public will notice the long-term benefits of keeping PAVs. There will be a rejuvenated traveling economy, which has been on the downside for the past few years. People will be able to work in large cities with better paying jobs and opportunities and still be able to live in small rural areas. Personal and business travel will be controlled by the individual themselves down to the teeth. Even if someone cannot afford to obtain a PAV of their own, they can rent or temporarily use one from a local airfield. The noise pollution from these aircrafts will be lower than it is with current road vehicles!

Picture your local fire department or police department overloaded with a particular disturbance. If PAVs were used, state and other local police can easily and quickly rush for assistance. The same concept of efficiency can be applied to every rescue and defense departments such as the Coast Guard and National Guard around the nation. If PAVs were to be used in real life we would redefine the basic ideas behind travel. The transformation will get us one step closer to the stereotype of the “modern civilizations”. Though I believe that the ideas of personal air vehicles are incredibly bold and significant there are still a few problems that need to be sorted through. Most of those problems are security related and will need to be taken care of before the United States government ever considers allowing the use of PAVs by the public.

I can imagine my neighborhood evolving into a more mature and advanced society by the use of PAVs in the future. My dad can leave for work at a later hour not having to worry about the long commuting time that he endures through like millions of other distance workers. The police department can assist fellow officers cities away. My family and I can travel many states or regions for a summer trip without the worry of airport hassle and cost or the agony of car travel. Without the unpleasantness of noise pollution and size consumption we can enjoy and vitally use this technology.

Not only are PAVs an enormous leap forward in evolution of vehicles but it is also a step that allows us to enter through a new door of opportunities. Identical to the creation of concords and 747s, this aircraft can open a door for a whole new world of travel. We are witnessing the beginning of a technological revolution.

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